REF 7/c

Year XV January, 1941 No. 1

INTERNATIONAL INSTITUTE OF AGRICULTURE

INTERNATIONAL BULLETIN OF PLANT PROTECTION

PUBLISHED MONTHLY

REPRINT FROM THE 'INTERNATIONAL REVIEW OF AGRICULTURE'

CONTENTS

Discoveries and Current Events. — Argentine Republic: Further Investigations on the 'Lepra Explosiva' of the Orange, p. 1. – Spain: The Moroccan Locust, *Dociostaurus maroccanus*, in 1939-1940, p. 3. – Poland: Chief Diseases and Pests Observed in 1940, p. 4.

Legislative and Administrative Measures. — Germany, p. 6. – Germany (Protectorate of Bohemia and Moravia), p. 7. – Germany (Ostmark), p. 8. – Germany (Prussia), p. 8. – Argentine Republic (Province of Mendoza), p. 8. – Chile, p. 8. – Colombia, p. 9. – Spain, p. 9. – Italy, p. 9. – Nicaragua, p. 9. – Peru, p. 9. – Uruguay, p. 10.

Recent Bibliography, p. 10.

IMPERIAL MYCOLOGICAL INSTITUTE JUL 1946

ROME
VILLA UMBERTO I
1941

NOTE

Subscribers in the undermentioned countries may pay their subscriptions or remittances to the following banks:—

France: **Société Générale** – Compte abonnements CCD. 522.470 – Département de l'étranger, Clients divers
29, Boulevard Haussmann - PARIS IX°.

The Netherlands: **Rotterdamsche Bankvereeniging N. V.** – Contrôle-Afdeeling
Postbus c. 77 - AMSTERDAM.

Switzerland: **Société de Banque Suisse - ZURICH.**

United Kingdom: **Lloyds Bank Ltd.** – Colonial and Foreign Department
80, Gracechurch Street – LONDON, E. C. 3

IMPORTANT

The prices of all publications issued by the International Institute of Agriculture include postage.

ANNUAIRE INTERNATIONAL DE LÉGISLATION AGRICOLE, 1939

(FRENCH EDITION ONLY)

PRICE: **80 lire.** — CLOTH-BOUND: **90 lire.**

The reproduction either in whole or in part of material printed in this Bulletin is permitted but only on the express condition that the source is duly acknowledged as follows:— *International Bulletin of Plant Protection* (*International Institute of Agriculture*).

ROME — PRINTING OFFICE CARLO COLOMBO.

The radio communiqués of the International Institute of Agriculture are transmitted between 3.15 and 3.25 p. m. on the following days: Monday, Italian; ***Tuesday,*** French; ***Wednesday,*** English; ***Thursday,*** German; ***Friday,*** Spanish; ***Saturday,*** Russian.

They are broadcast from Rome 2 RO 6 (19.61 m. kC/s 15300) and Rome 2 RO 8 (16.84 m. kC/s 17820).

The hour of broadcasts is Central European Time, which is one hour ahead of Greenwich Mean Time and 5 hours ahead of Eastern Standard Time in the United States.

ACTIVITY OF THE INTERNATIONAL INSTITUTE OF AGRICULTURE

The Meeting of the Permanent Committee. — The winter session of the Permanent Committee was held on December 16, 1940. The Delegates of the following countries attended the meeting: Germany, Argentina, Denmark, United States of America, Hawaii, Philippine Islands, Virgin Islands, Porto Rico, Finland, Hungary, Iran, Eire, Italy, Italian East Africa, Libya, Japan, Paraguay, Peru, Romania, Switzerland, Turkey, Uruguay.

The agenda contained several important questions, besides the ordinary administrative questions. The Committee dealt particularly with the various problems connected with the general plan of work assigned to the Institute in view of the economic reconstruction after the end of the war.

In his report to the Permanent Committee, the Secretary General has given a detailed account of the work done by the different Bureaux, showing that despite administrative and technical difficulties arising from the present international situation, all the Bureaux are doing their utmost to keep in full activity and thus fill the tasks assigned to them.

The Permanent Committee approved a report concerning the organization and the execution of the work for the second world agricultural census (see note below).

The Delegations of Japan and Romania to the Permanent Committee of the International Institute of Agriculture. — M. Yoshiro Ando, Counsellor of the Japanese Embassy in Rome, has been appointed a Delegate for Japan to the Permanent Committee of the International Institute of Agriculture.

M. Constantine Enescu, who is the new Commercial Counsellor at the Romanian Legation in Rome, has been appointed a Delegate for Romania to the Permanent Committee of the Institute.

The Second World Agricultural Census. — At its last session, the Permanent Committee undertook the discussion on the organization and execution of the work for the second world agricultural census. This question was brought to the attention of the Committee by a Report of the Secretary General, Professor Papi.

The importance of this initiative, the first phase of which was completed in 1930, is well known to everybody. Its purpose is to get from every country, at regular periods, an agricultural census which is fundamental for the knowledge of the agricultural conditions in each country and for the advancement of agricultural statistics. The International Institute of Agriculture acts as an organ of coordination, and aims at obtaining from every country that the census be taken in such way as to give the best results both from a national and an international point of view. The methods followed by the Institute in the organization of this enquiry furnish, at the present moment, an extremely interesting indication on the possibilities offered by its technical means. The relations between the Institute and the statistical bureaux of the different countries are particularly important, in as much as they make it possible for the Institute to obtain the documentation which is needed for the solution of the agricultural economic problems that will have to be faced at the end of the war.

The five volumes containing the results of the first agricultural census are preceded by an important methodological study. They constituted the preparatory foundation for the second census. In 1936 and 1937 meetings of agricultural statisticians were held at the Institute. Useful suggestions were made both for the final form of the questionnaire to be submitted to the Governments, and as regards the different details of the organization. A pamphlet was sent to the different Governments containing a foreword, some introductory notes, the form of the questionnaire and the reports summarizing the work accomplished by the statisticians at the meetings mentioned above. The Institute has asked the countries interested in the work to keep as far as possible to the form submitted to them.

According to the Institute plan, the census should deal with conditions in 1939 as regards the countries of the northern hemisphere, and the period from July 1, 1939 to June 30, 1940 as regards the southern hemisphere. Governments that for special reasons may not be able to carry on the census within the periods indicated by the Institute, are requested to choose another year as near as possible to the one suggested in the Institute memorandum.

On the basis of the information which had been received before the beginning of the war, the Institute was justified in expecting that the second census would mark a great progress as compared with the first, both from the point of view of organization and number of participant States. In fact, not only nearly all the countries that had taken part in the first census, but many others as well had communicated their intention to participate in the second.

The war could not fail to have an unfavourable influence on the census work. But even though this work has been badly affected by present conditions in several countries, satisfactory progress may nevertheless be registered under many aspects.

Prizes conferred on the occasion of the First International Competitive Exhibition of Agricultural Films. — The distribution of prizes conferred by the Jury of the International Competitive Exhibition of Agricultural Films was made at the Institute to the diplomatic representatives of the following countries: Germany United States, Hungary, Mexico and Venezuela. Prices conferred on Italian Institutions were handed directly to the representatives of the same. In agreement with the Delegate of Portugal to the Permanent Committee of the Institute, the distribution of the prizes conferred upon Portugal was made by M. van Haastert, Delegate of the Netherlands and Netherland Indies, who is now at Lisbon. The other prizes will be given as soon as the necessary arrangements with the diplomatic representatives in Rome are completed. Prizes conferred on France and the United Kingdom will be delivered in agreement with instructions from the diplomatic missions charged with their interests in Italy.

INTERNATIONAL BULLETIN
OF PLANT PROTECTION

1941 No. 1

DISCOVERIES AND CURRENT EVENTS *

ARGENTINE REPUBLIC.

Further Investigations on the 'Lepra Explosiva' of the Orange †

The further experiments carried out on the 'lepra explosiva' of the orange by M. Mariano J. Frezzi, Agricultural Engineer, Chief of the Phytopathological Laboratory, Bella Vista, Corrientes, fully confirm the investigations made from 1934 to 1937 (see this *Bulletin*, 1935, No. 8, pp. 173-175 and 1938, No. 6, pp. 121-122). Further details have now been obtained on the characteristics of this disease, the behaviour of the mites which transmit the disease, and the rational method on which control is based.

The study of the lesions which appear on the stems, leaves and fruits showed the following characteristics: on the branches, these lesions are found to be more severe on the young branches from 8 to 10 months up to 3 years; generally, the lesions take the form of swellings on the bark, of the same colour or slightly paler, and which gradually apread, the central part often turning brown and later a reddish colour as the lesion develops.

The swelling of the cortical tissue is not uniform, but in round spots or irregular patches; the swelling continues to spread to an extent of 10 to 15 mm. When the disease attains a certain stage in its development, the bark cracks, the fissures usually being reddish, cinnamon, etc. coloured. Finally the affected tissue peels, this being due, as also the cracking, to a mechanical action in consequence of the branch thickening.

Sometimes the lesions take the form of more or less round spots, alternately in some cases with strips of green tissue: this colour, light green or yellowish at the beginning, later turns russet. The spots are flat or slightly concave. The cortical tissue does not react.

On the leaves, the lesions take the form of oily spots if seen against the light, round or oval, etc.; there may be one or more on each leaf, but they are always to be found on full developed leaves. As the leaves become older, swellings form, at first brown in colour, turning to chestnut and later dark red. Finally the leaves turn yellow, curl up and fall.

* Under this and the next heading the countries are arranged in French alphabetical order.

† Communication from the official correspondent of the Institute, Mr. JUAN B. MARCHIONATTO, Agricultural Engineer, Director of 'Sanidad Vegetal', Ministry of Agriculture, Buenos Aires, Argentine Republic.

On the fruits, it was seen from numerous histological observations that a lesion, even in the aggravated form, never affected more than $^3/_4$ of the peel (mesocarp).

Experiments made with a view to producing the disease by transporting the mite *Tenuipalpus pseudocuneatus* on to the tree have always given positive results. By means of a needle, the mites were carefully placed on droplets of distilled water and when the water had evaporated the mites spread over the tree. In this case, the plants used were the common sweet orange, 1 $^1/_2$ to 2 years old, grown in pots, all the aerial parts having been previously disinfected with alcohol. About 200 mites were placed on each orange tree, which was then covered and kept in a laboratory room.

After two and a half months, typical lesions were observed on the leaves, young branches, petioles and spines. These were very decided at the end of 4 months; but after only 3 months, 37 lesions were noted on one orange plant and 40 on another. Numerous leaves with 4 to 5 lesions in time turned yellow, curled up and dropped.

These experiments were carried out on several young plants and 6 became diseased. In this way it was possible to study the development of the lesions and their effect on the different parts of the plant: the young branches are the first to wither, this action being accelerated by heat and dryness. The development of the lesions is very slow; as seen from the plants in the field and also the plants on which the disease is produced artificially. Among the latter, a nine months' old plant withered completely 7 months after the appearance of the disease on the stem and the leaves.

During the winter months, because of the difference in temperature, there is also a difference of about a month and a half in the appearance of the lesions in young plants studied in May and June.

An important fact was noted: exposing the young, already attacked plants under observation in the laboratory to the direct action of the solar rays stimulated the development of the disease and increased the number of lesions. This fact has been proved by experience and agrees with previous observations that the disease always occurs with greater intensity on the outer branches and on the part of the tree turned towards North-East and South-East, *i. e.*, the part most exposed to the sun's rays.

Several histological cuts made of lesions at early and later stages showed that the lesions are always limited to the cortical tissue and that those affecting the woody tissue are always very old and on the branches about to wither.

The swellings which give the lesions a raised appearance are due to a primary cellular multiplication (hyperplasia); afterwards, necrosis of these cells takes place, the cells at first being chestnut coloured and later turning a reddish, cinnamon colour, etc. This coloration gradually appears on the outside of the lesion as it becomes older; if the lesions are then cut, cracking and splitting of a hard vitreous aspect are produced.

The object of these experiments was to determine the most effective and economic means of checking the damage caused by the 'lepra explosiva' and if possible to save both the young and full grown trees without eradication. This

system, although the most effective for controlling the disease is too expensive for the grower with little funds.

Following the experiments carried out on the mites causing the disease, tests are now being effected for the control of these Acarina by pruning the trees and spraying with sulphur preparations, alone or combined, as follows (1): Trees 25 to 30 years old severely ettacked: in some cases all the diseased parts are removed and spraying carried out periodically, in others, only the removal of the most severely attacked parts, and in others again, only spraying; (2) Trees 8 to 10 years old: in badly diseased trees, both removal of the most severely attacked parts and spraying, in more lightly attacked trees, only spraying; (3) Young 4 to 5 year old plants: spraying only.

The trees under observation number 331 and are distributed over private orchards, the national nursery and the experiment field of the Laboratory. The results obtained to-date are excellent: a considerable decrease in the number of fresh lesions is observed, while the new shoots grow normally without being affected.

SPAIN.

The Moroccan Locust, *Dociostaurus maroccanus*, in 1939-1940 *

The enforced lack of attention to crops in the provinces where civil war took place led to an exceptional increase in Moroccan locust; egg-laying occurred in the vineyards and olive-groves neglected during the three years. The total area infested by eggs, as estimated by the National Agronomic Service, amounted to 177,000 ha., an area rarely exceeded in Spain. The Provinces of Ciudad Real, Toledo, Madrid and Badajoz suffered the most damage; the Provinces of Caceres, Guadalajara, Cordova and Cuenca were not attacked so severely.

D. Francisco de la Péña, in charge of control operations, was able to send out 117 gangs supplied with motor ploughs for digging up the zones where egg-laying was the heaviest (number of egg-pods per square metre). The farmers, moreover, with animal traction were able to plough 68 per cent. of the area mentioned above, though results were not so effective owing to the heavy rains which delayed ploughing.

In spring, however, results were highly satisfactory, for it was possible to completely control this pest without any appreciable loss despite the difficulty incurred in obtaining insecticides and other material required. In each province, centres (totalling 115) were established and arranged in such a way that they were within a radius of 20 km. from the probable foci.

In general, poisoned bait was used, the usual formula being simplified as follows:—

Coarse bran 100 kg.; sodium arsenite (80 per cent. As_2O_3) 1.5-2 kg.; water 60 to 80 litres.

* Communication from the official correspondent of the Institute, Mr José del Cáñizo, Agricultural Engineer, Central Station of Phytopathology, Madrid, Spain.

Approximately 4,000,000 kg. of poisoned bait were distributed and excellent results were obtained proving that the addition of molasses is unnecessary. The best method of preparing the bait is to previously dissolve the sodium arsenite in water at the rate of 2.5 per cent. and to spray the bran with this solution. The ratio in weight of bran to bait was 55:100. To reduce costs of treatment, an attempt, on a relatively large scale, was made to replace the bran by an equal quantity of a mixture of poplar sawdust and bran (40 per cent. by weight of sawdust and 60 per cent. bran). With this mixture, highly satisfactory results were obtained, thus realizing an appreciable saving.

It may be noted that six workers can distribute 1000 kg. of bait in an 8-hour day. With the day workers at 8 pesetas, three applications of bait, at the rate of 100 kg. per hectare, cost 128 pesetas, including cost of material.

For control of hoppers (1st and 2nd stage), 447,000 litres of petrol mixed with 40 per cent. gas-oil were consumed and applied by means of special sprayers. Flame throwers used an excessive amount of fuel which was not compensated by the results obtained.

Zinc barriers (260,000 metres) were also used.

For the transport of workers and material, 6 light trucks, 12 lorries and 28 motor-cycles supplied by the army, were employed.

POLAND.

Chief Diseases and Pests Observed in 1940 *

According to the reports of the Chambers of Agriculture and the observations of the Plant Protection Institute at Puławy, in 1940, fruit crops suffered the most damage. A series of very severe frosts killed off a very large number of fruit trees in the orchards and nurseries throughout the country. Hares aggravated losses. Damage was less in the fields, though part of the autumn crops suffered severely, either through frost or excessive moisture.

The snow mould of cereals (*Fusarium nivale*) was only reported in the Cracow district. The prolonged drought in May and June in general checked the growth of cereals, in particular, rye and oats, and also early potatoes. The fields being neglected were overrun with weeds causing heavy losses in autumn crops.

Diseases.

Cereals. The following diseases are reported: stem rust (*Puccinia graminis*) in the districts of Radom and Lublin; brown rust of wheat (*P. triticina*) throughout the country and particularly in the Vistula Valley, southern area; crown rust of oats (*P. coronifera*) in the Cracow district, and later in those of

* Communication from the official correspondent of the Institute, Prof. Dr. St. Minkiewicz, Plant Protection Institute, Puławy, Poland.

Radom and Lublin; bunt of wheat (*Tilletia tritici*) probably to a small extent throughout the country; loose smut (*Ustilago tritici*), on wheat and rye, was only reported in the Cracow district. Barley stripe (*Helminthosporium gramineum*) was only found extensively in the districts of Warsaw and Cracow and to a lesser extent in the Lublin district.

Potatoes. Most of the plants were affected with black stem probably connected with dry rot and wet rot from which most of the imported seedlings suffered. Potato blight (*Phytophthora infestans*) was reported throughout the districts of Warsaw and Lublin. New foci of wart disease (*Synchytrium endobioticum*) were found in the districts of Cracow and Warsaw. In some areas, wet rot destroyed 40-60 per cent. of the tubers. The common scab (*Actinomyces* sp.) was observed to a general extent and in mass in the districts of Warsaw and Ostrów. Virus diseases were reported throughout the country and particularly in the Lublin district.

Beets. Leaf spot (*Cercospora beticola*) was reported to a general extent in the districts of Cracow, Warsaw, Opatów and Radom. In some areas attack was severe; in the spring, besides this disease, local attacks of beet seedling rot and bacillary gummosis were reported.

Different plants. Clover, lupin and peas were severely attacked by *Erysiphe polygoni*. In the Opatów and Radom districts, garden peas were attacked by rust (*Uromyces pisi*).

Poppy heads suffered severely from *Alternaria* sp. which, in some counties of Błonie, destroyed 50-80 per cent. of the harvest.

Bacteriosis of the ducts was frequently observed on tomatoes in the Warsaw district. In the districts of Warsaw and Lublin, the leaves and fruits were heavily attacked by *Alternaria* and *Septoria* and also by *Phytophthora infestans*, which caused rotting of the greater part of the fruits.

Late cucumbers suffered severely, in the districts of Cracow and Puławy, from anthracnose (*Gloeosporium lagenarium*) and squashes from *Erysiphe cichoracearum*.

In the Mińsk district, flax was heavily attacked by rust (*Melampsora lini*).

In the districts of Lublin and Radom, forage plants suffered severely from crown rust (*Puccinia coronifera*).

INSECTS.

Crops. Owing to the fields being overrun with weeds, the ground has become infested with Elateridae. Very probably this trouble will continue in the coming years as the larvae increase.

Among the industrial and oil-yielding crops, Cruciferous plants have suffered some damage: turnips were heavily attacked by *Meligethes aeneus*, as also cabbages and cauliflowers. Cauliflowers were heavily attacked by many other harmful insects such as *Phyllotreta* sp., *Hylemyia* (*Chortophila*) *brassicae*, *Baris chloris* and aphids.

In grain stacks in the district of Radom, and to a lesser extent in the district of Warsaw (Grójec), heavy damage was produced by the caterpillars of *Hadena basilinea*.

In the Warsaw district, potato tubers were attacked by the larvae of *Melolontha* and also by the mole-cricket (*Gryllotalpa gryllotalpa*) which occurred in large numbers. Damage to tubers caused by the larvae of Elateridae was reported throughout the district of Warsaw.

Peas and beans throughout the district of Warsaw and beans in the Lublin district were heavily attacked by caterpillars. Near Warsaw, haricot beans suffered severely from *Tetranychus* sp. Peas were heavily attacked by *Laspeyresia* sp. in the county of Puławy and to a lesser extent in the county of Warsaw.

In some areas, rodents have increased in numbers. In the districts of Warsaw and Puławy the roots of parsley were badly damaged.

Orchards. The severe frosts tended to put insect attack in the background, however, local reports show that heavy damage has been caused by different species.

A heavy attack of *Eriophyes piri* was reported on pear trees in Błonie, Warsaw district. *Anthonomus pomorum* appeared in large numbers in the county of Lublin. In the Puławy orchards, heavy damage to apples was caused by *Rhynchites bacchus* and *Rhynchites* sp. *Tmetocera ocellana* and *Argyroploce variegana* were not so numerous as last year, probably owing to the severe frosts which killed off many of the caterpillars. *Laspeyresia pomonella* came through the winter well and apples at Puławy and its environs have been heavily attacked. The main swarming took place at the end of June and the second generation was not so numerous owing to the cold in August. *L. funebrana* was only found to a small extent, many of the plum trees being frozen and the few that remained flowering very little. *Euproctis chrysorrhoea* was fairly numerous in the Lublin district and other regions of the country; many winter nests can now be seen in the orchards and the hedges of live oak. *Aporia crataegi* was less numerous; *testudinea* was also less numerous that past years in Puławy and its environs *Caliroa limacina* was reported as heavily infesting pear trees in Błonie near Warsaw.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Germany. — By virtue of an Ordinance dated September 11, 1940 relative to the production of potato varieties not resistant to wart disease [*Synchytrium endobioticum*], the farmers who, profiting by the Ordinance of August 10, 1939 [see this *Bulletin*, 1940, No. 2, p. 32], in 1940 cultivated 'Erstling' potatoes for the production of certified seed, are authorized to continue cultivation on the same scale in 1941.

In derogation of the prescriptions of the Ordinance dated September 16, 1937 [see this *Bulletin*, 1938, No. 2, p. 28] relative to the elimination of potato varieties not resistant to wart disease, the farms where, in 1940, potatoes of the ' Allerfrüheste Gelbe ' and ' Centifolia ' were certified, shall also be able to obtain authorization for these varieties in 1941, but only for an area not exceeding that under cultivation in 1940. [(*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. November 1940, Bd. XII, Nr. 6, S. 137-138).

*** An Ordinance of September 25, 1940 establishes that the potatoes intended for the Protectorate of Bohemia and Moravia should be produced in regions free from the wart disease [*Synchytrium endobioticum*]. Such regions, according to the Notification of May 7, 1940 of the Minister of Agriculture, Praha, are considered to be the German localities situated at a distance of at least 2 km. from any centre of infestation. (*Nachrichtenblatt, für den Deutschen Pflanzenschutzdienst*, Berlin, Anfang November 1940, 20. Jahrg., Nr. 11, S. 76).

*** By Ordinance of October 5, 1940, the Minister of Agriculture states that imported fresh fruit preserved by freezing to a temperature maintained below -18°C. can be exempted from phytosanitary inspection as regards the San José scale [*Aspidiotus perniciosus*], the cherry fruit fly [*Rhagoletis cerasi*] and the apple maggot [*Rh. pomonella*]. (*Ibid.*).

*** By Ministerial Provision of October 19, 1940, based on the Decrees of March 28, 1929 and September 30, 1932 [see this *Bulletin*, 1929, No. 6, p. 83 and 1932, No. 12, p. 205] passed with a view to preventing the introduction of the carnation leaf roller [*Tortrix pronubana*], the importation of carnations (cut flowers) is authorized from November 15, 1940. (*Ibid.*).

*** The research station for work on the Colorado beetle [*Leptinotarsa decemlineata*], established at Kruft by the ' Biologische Reichsanstalt für Land- und Forstwirtschaft ', Berlin-Dahlem [see this *Bulletin*, 1940, No. 6, p. 123] has, from September 21, 1940, suspended all work until further notice. *Ibid.*, S. 74).

Germany (Protectorate of Bohemia and Moravia). — In Notification dated June 12, 1940, the Minister of Agriculture publishes the regulations regarding the compulsory sanitary inspection of nurseries for fruit trees and shrubs and vines.

This inspection will be carried out by officers of the agricultural experiment stations and will comprise all establishments engaged in the production and sale of fruit plants and shrubs and vines.

Inspection may take place once, twice or even thrice a year. The report drawn up at each visit should describe the condition of the crops and products and also state the control measures adopted and provided for, and, if necessary,

specify what part of the crops was either rejected for sale or subjected to restricted sale. A rough draft of the grounds of the establishment in question has to be included in the report. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. November 1940. Bd. XII, Nr. 6, S. 143-144).

Germany (Ostmark). — By Ordinance dated August 17, 1940, measures have been adopted to facilitate the importation of plants and plant products.

Exempt from phytosanitary inspection are: fresh fruit intended for consumption on restaurant cars, the fresh fruit, not more than 5 kg., serving as provisions during the journey or else intended for direct consumption by the travellers in their compartments; finally, fresh fruit, sent by post, as a gift and to be consumed in the home of the addressee.

Also exempt from phytosanitary inspection are: potatoes (up to 2 kg. per person) on river and canal boats to be consumed on the said boats, cut flowers and bouquets taken by travellers, also wreaths, pine branches, Christmas trees, etc., always provided that importation is not made for commercial purposes.

The facilities accorded for frontier trade in the border districts consist mainly of authorization to import certain plants and plant products harvested by the proprietors and occupiers of land situated beyond the frontier. (*Amtliche Pflanzenschutzbestimmungen*. Berlin, 1. November 1940, Bd. XII, Nr. 6, S. 141-143).

Germany (Prussia). — Decree of September 26, 1940 prescribes that, in Sleswig, nursery plants blighted by frost to the extent of making them unfit for planting should either be destroyed or else left in the nursery beds until the Plant Protection Service gives a decision in their respect. Sale of these plants is prohibited. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. November 1940, Bd. XII, Nr. 6, S. 140-141).

Argentine Republic (Province of Mendoza). — By Law No. 1339 of October 3, 1939, the ' bicho de cesto ' (*Oeceticus platensis*) is declared a crop pest in the Province of Mendoza. At the same time, the Government Executive is authorized to make provision for the control of this beetle through the intermediary of the ' Dirección de Industrias y Fomento Agrícola ' (Ministerio de Economía, Obras Públicas y Riego. Dirección de Industrias y Fomento Agrícola. *Boletín Agrícola*, Mendoza, mayo y junio de 1940, año VIII, núms. 5 y 6, págs. 179 y 180).

*** Decree No. 388 E ratifies the scheme for the control of the ' bicho de cesto ' drawn up by the ' Dirección de Industrias y Fomento Agrícola '. (*Ibid.*, págs. 181 y 182).

Chile. — Ministerial Decree No. 346 of April 10, 1940 established the rate to be charged for crop disinfection work carried out by the ' Departamento de Sanidad Vegetal ' attached to the Ministry of Agriculture. (*El Agricultor del Norte*, La Serena (Chile), agosto de 1940, año 25, nº 8, págs. 321 a 233).

Colombia. — Decree No. 1416 of July 18, 1940 establishes certain provisions regarding the prevention of the Sigatoka disease [*Cercospora musae*] in the banana groves in the Magdalena region. (*Diario Oficial*, Bogotá, 24 de julio de 1940, año LXXVI, núm. 24421, págs. 281 y 282).

Spain. — An ' Orden ' of September 30, 1940 establishes the regulations regarding locust control. (*Boletín Oficial del Estado*, Madrid, 6 de octubre de 1940, año V, núm. 280, págs. 6941 y 6942).

Italy. — Ministerial Decree of October 20, 1940 authorizes the hunting and capture of boars declared pests in the Province of Fiume. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 25 ottobre 1940, anno 81°, n. 251, p. 3989).

*** The Ministerial Decree of October 30, 1940 which fixes the special rules for the export of lettuces (cabbage and roman) and of endives (including curled variety) requires, *inter alia*, that these salads shall be free from attacks of parasites and frost damage. (*Ibid.*, 13 novembre 1940, n. 265, pp. 4328-4330).

*** By Ministerial Decree of November 15, 1940, the communes of Brienza, Satriano di Lucania, Casalnuovo Lucano, Castelgrande, Grumento Nova, Latronico, Moliterno, Pescopagano, Picerno, Vietri di Potenza, Sasso Castalda, Savoia di Lucania and Vaglio Lucano of the Province of Potenza have been declared infested with grape phylloxera. (*Ibid.*, 5 dicembre 1940, n. 284, p. 4595).

*** By three Ministerial Decrees dated November 21, 1940, the communes of Altavilla Irpina, Tufo and Chianche in the Avellino Province, Acquasanta in the Province of Ascoli Piceno, and Torrecuso in the Province of Benevento have been declared infested with grape phylloxera. (*Ibid.*, 29 novembre 1940, n. 279, pp. 4521-4522).

*** Ministerial Decree of November 26, 1940 declares the commune of Genazzano in the Province of Rome to be attacked by grape phylloxera. (*Ibid.*, 5 dicembre 1940, n. 284, p. 4595).

Nicaragua. — Decree No. 70 of June 17, 1940 declares locust (' chapulín ') control to be of national importance. (*La Gaceta*, Managua, D. N., 21 de junio de 1940, año XLIV, núm. 137, págs. [1521] y 1522).

*** A Decree dated June 18, 1940 regulates locust control measures. (*Ibid.*, págs. 1533 y 1534).

Peru. — By Government Provision, the ' Campaña de difusión del cultivo del piretro ' [*Chrysanthemum cinerariaefolium*] has been organized. (*La Vida Agrícola*, Lima (Perú), agosto 1° de 1940, vol. XVII, no. 201, págs. 686 a 688).

*** Resolution, dated August 20, 1940, declares the scale insects *Chrysomphalus aonidum, Selenaspidus articulatus* and *Lepidosaphes beckii,* attacking orange trees in the Camaná Valley, to be crop pests; control operations have been initiated. (*Ibid.*, setiembre 1º de 1940, no. 202, pág. 769).

Uruguay. — A Resolution, dated June 25, 1940, declares manufacturers of products employed against animal and plant diseases and pests exempt from the social assistance tax. (*Diario Oficial de la República Oriental del Uruguay,* Montevideo, 4 de julio de 1940, tomo 140, núm. 10144, pág. 22-A).

RECENT BIBLIOGRAPHY

ADAM, D. B. On the occurrence of *Cercosporella herpotrichoides* Fron in South Australia. *The Journal of the Australian Institute of Agricultural Science,* Sydney, 1940, Vol. 6, No. 1, pp. 48-51, figs. 1-2. References,p. 51.

AHRENS, W. E. The practicability of detecting Dutch elm disease by trunk sampling. *Phytopathology,* Lancaster, Pa., 1940, Vol. 30, No. 6, pp. 521-527, fig. 1. [*Ceratostomella ulmi*].

ALLMAN, S. L. Toxicity tests with the Queensland fruit fly, *Strumeta* (*Chaetodacus*) *tryoni* Froggatt. *The Journal of the Australian Institute of Agricultural Science,* Sydney, 1940, Vol. 6, No. 1, pp. 40-44. References, p. 44.

AMBROS, Wilhelm. Vorsichts- und Schutzmassnahmen gegen Nonnenkalamitäten mit besonderer Berücksichtigung der Bestandesleimung. *Centralblatt für das gesamte Forstwesen,* Berlin 1939, 65. Jahrg., Heft 10, S. 238-242; Heft 11, S. 258-262.
[*Lymantria monacha*].

ARMSTRONG, G. M., MACLACHLAN, J. D., and WEINDLING, R. Variation in pathogenicity and cultural characteristics of the cotton-wilt organism, Fusarium vasinfectum. *Phytopathology,* Lancaster, Pa., 1940, Vol. 30, No. 6, pp. 515-520, fig. 1.

ARONESCU-SĂVULESCU, Alice. Virus-urile: progrese în cercetări, orientări noi. *Viaţa Agricolă,* Bucureşti, 1940, an. XXXI, no. 8, pag. 247-253, fig. 1-2. Literatura, pag. 253.

ARRUDA, S. C. Murcha de Sclerotium. *O Biologico,* S. Paulo, 1940, anno VI, nº 3, pags. [67]-68.
[*Sclerotium rolfsii* on groundnut].

BAILEY, Stanley F. The lily thrips. *Bulletin of the Department of Agriculture, State of California,* Sacramento, 1939, Vol. XXVIII, Nos. 7, 8, 9, pp. 479-483, fig. 1. References, pp. 482-483.
[*Liothrips vaneeckei*].

BELLUR, Margaret K. Carolina horsenettle, *Solanum carolinense* L. and other weedy solanums in California. *Bulletin of the Department of Agriculture, State of California,* Sacramento, 1939, Vol. XXVIII, Nos. 7, 8, 9, pp. 471-478, figs. 1-4.

BERR, A. Mobilisierte Technik im Kampf gegen die Pflanzen-Schädlinge. Aufgaben und Ziele der " Landwirtschaftlichen Zoologie " zur Schliessung der Ernährungstücke. *Deutsche Landwirtschaftliche Presse,* Berlin 1940, 67. Jahrg., Nr. 41, S. [371]-372; Nr. 42, S. 380.

BLACK, L. M., and PRICE, W. C. The relationship between viruses of potato calico and alfalfa mosaic. *Phytopathology,* Lancaster, Pa., 1940, Vol. 30, No. 5, pp. 444-447, fig. 1. Literature cited, p. 447.

BLODGETT, Earle C. A leaf spot of Italian prune perpetuated in budded stock. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 4, pp. 347-348, fig. 1.
[A non-parasitic trouble].

BURNHAM, Chas. R., and CARTLEDGE, J. L. Linkage relations between smut resistance and semisterility in maize. *Journal of the American Society of Agronomy*, Geneva, New York, 1939, Vol. 31, No. 11, pp. 924-933, fig. 1. Literature cited, p. 933.
[*Ustilago zeae*].

CADMAN, C. H. Graft-blight of lilacs. *The Gardeners' Chronicle*, London, 1940, Vol. CVII (Third Series), No. 2768, p. 25.
[This affection is entirely due to the use of privet (*Ligustrum*) as an understock for lilac (*Syringa*) and is the expression of incompatibility between stock and scion].

CAMPBELL, Leo. Black root of sugar beets in the Puget Sound section of Washington. *State College of Washington. Agricultural Experiment Station. Bulletin No. 379*, Pullman, Washington, 1939, 14 pp., 2 figs.
[*Phoma betae, Rhizoctonia solani, Pythium de Baryanum, Aphanomyces cochlioides, Fusarium* sp.].

CASTELLANI, Ettore. Problemi fitopatologici dell'Impero. Osservazioni ed orientamenti. *I Georgofili. Atti della R. Accademia dei Georgofili*, Firenze, 1940, VI ser., vol. V (1939), disp. 4, pp. [545]-558.
[A brief synthesis of the chief phytopathological problems at present in Italian East Africa].

CHESNOKOV, P. G. World's assortment of oat varieties in relation to the Svedish fly. *Comptes rendus (Doklady) de l'Académie des Sciences de l'URSS*, Moscow, 1940, nouv. sér., vol. XXVII, nº 7, p. 718-721, 1 carta. References, p. 721.

CHIAPPELLI, R. Lo sclerozio del riso. *Risicoltura*, Vercelli, 1939, anno XXIX, n. 1, pp. 319-321, figg. 1-8.
[*Sclerotium oryzae*].

CHIDESTER, Mac Spradling. A pink stain of wood caused by a species of Geotrichum. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 6, pp. 530-533, pl. II.

CHILTON, S. J. P. The occurrence of Helminthosporium turcicum in the seed and glumes of Sudan grass. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 6, pp. 533-536, fig. 1. Literature cited, p. 536.
[On *Sorghum vulgare* var. *sudanense*].

CHRISTENSEN, Clyde M. Studies on the biology of Valsa sordida and Cytospora chrysosperma. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 6, pp. 459-475, figs. 1-3. Literature cited, pp. 474-475.

COLQUHOUN, T. T. Effect of manganese on powdery mildew of wheat. *The Journal of the Australian Institute of Agricultural Science*, Sydney, 1940, Vol. 6, No. 1, p. 54. References.
[*Erysiphe graminis*].

CONDIT, Ira J. A bibliography on the avocado (*Persea americana* Miller). University of California. Citrus Experiment Station. Riverside, California, 1939, 293 pp. [Mimeographed].
[Contains *inter alia*:—
Diseases, pp. 115-131.
Insects and pests, pp. 132-150].

CORBETT, G. H., and MILLER, N. C. E. The identification of grubs from rubber estates. *Department of Agriculture. Straits Settlements and Federated Malay States. Scientific Series No. 22*, Kuala Lumpur, 1939, 7 pp., 1 fig., 4 pls.
[*Xenostomus punctipennis, Lachnosterna bidentata, Lepidiota stigma, Leucopholis nummicudens, L. tristis, L. rorida, Melolontha vervex, M. argus, Psilopholis vestita, Anomala cupripes, A. pulchripes, A. viridis, A. pallida, A. aureola, A. chalcites, Aserica* sp., *Apogonia cribricollis*].

DA SILVA, Sebastião Gonçalves. Aspecto fitosanitário das principais plantas cultivadas do Estado do Espirito Santo. *Revista da Sociedade Brasileira de Agronomia*, Rio de Janeiro, 1939, vol. II, nº 4, pags. [80]-84.

DAVIS, W. H. New stages of Sporocybe azaleae. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 6, pp. 506-514, pl. I, fig. 1.

DORMAN, Clarence, and COLEMAN, Russell. The effect of calcium arsenate upon the yield of cotton on different soil types. *Journal of the American Society of Agronomy*, Geneva, New York, 1939, Vol. 31, No. 11, pp. 966-971. Literature cited, pp. 970-971.

EBELING, Walter. The grape bud beetle, Glyptoscelis squamulata Crotch. *Bulletin of the Department of Agriculture, State of California*, Sacramento, 1939, Vol. XXVIII, Nos. 7, 8, 9, pp. 459-465, figs. 1-3. Literature cited, p. 465.

EDWARDS, E. T. Internal grain infection and kernel rot in the 1938 American maize crop. *The Journal of the Australian Institute of Agricultural Science*, Sydney, 1940, Vol. 6, No. 1, pp. 25-31. References, pp. 30-31.
[*Diplodia zeae, Gibberella zeae, G. fujikuroi, Fusarium* spp., *Nigrospora sphaerica, Cephalosporium acremonium, Penicillium* spp., etc.].

ESSIG, E. O. The blue oat or pea mite, *Penthaleus major* (Duges), in California. *Bulletin of the Department of Agriculture, State of California*, Sacramento, 1939, Vol. XXVIII, Nos. 7, 8, 9, pp. 507-508, fig. 1.

EVANS, J. W. Insect pests of currants, raspberries and gooseberries. *The Tasmanian Journal of Agriculture*, Hobart, 1939, Vol. X (New Series), No. 2, pp. 87-90, figs. I-III.
[*Aegeria tipuliformis, Diphucephala colaspidoides, Lecanium persicae* var. *coryli, Melampsalta torrida*]

FICHT, G. A. Root-knot nematode of tomatoes in relation to the Indiana canning crop. *Purdue University. Agricultural Experiment Station. Bulletin No. 434*, Lafayette, Indiana, 1939, 15 pp., 8 figs.
[*Heterodera marioni*].

FIFE J. M. Hydroxyl-ion concentration of the saliva of partly dessicated beet leaf hoppers. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 5, pp. 433-437, fig. 1. Literature cited, p. 437.
[*Eutettix tenellus*].

FISCHER, W. Über Eigenschaften der sogennanten "Netz-und Haftmittel" des Handels. *Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin 1940, 20. Jahrg., Nr. 9, S. [49]-52.

FOLSOM, Donald, and RICH, Avery E. Potato tuber net-necrosis and stem-end browning studies in Maine. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 5, pp. 313-322, fig. 1. Literature cited, p. 322.
[Net necrosis of the potato tuber, an occasional transitory symptom of leaf roll in certain varieties, is distinguishable in several ways from another kind of non-parasitic internal discoloration called in Maine stem-end browning].

GOSS, W. L. Weed seeds found in California grown barley, wheat, and oats. *Bulletin of the Department of Agriculture, State of California*, Sacramento, 1939, Vol. XXVIII, Nos. 7, 8, 9, pp. 436-455.

GÖSSWALD, Karl. Die Bekämpfung schädlicher Ameisen. *Biologische Reichsanstalt für Land- und Forstwirtschaft. Flugblatt Nr. 173*, Berlin 1939, 6 S., 1 Abb.
[*Lasius* spp., *Tetramorium caespitum, Myrmica rubra, Formica* spp., *Monomorium pharaonis, Iridomyrmex humilis, Camponotus* spp.].

GREATHOUSE, Glenn A., and RIGLER, Neil E. The chemistry of resistance of plants to Phymatotrichum root rot. V. Influence of alkaloids on growth of fungi. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 6, pp. 475-485. Literature cited, pp. 484-485.
[*Phymatotrichum omnivorum*].

HAASIS, Frank A. Studies on narcissus mosaic. *Cornell University. Agricultural Experiment Station. Memoir 224*, Ithaca, New York, 1939, 22 pp., 2 pls. References, pp. 20-22.

HAUSMANN, G. La degenerazione delle patate. Il complesso di cause che determinano il fenomeno. Un sistema di prevenzione favorevolmente sperimentato in Italia. *Giornale di Agricoltura della Domenica*, Roma, 1940, anno L, n. 2, p. 11.

HENRICH, J. O. Apple-black spot (Venturia inaequalis) investigations. *The Tasmanian Journal of Agriculture*, Hobart, 1939, Vol. X (New Series), No. 2, pp. 91-93. References, p. 93.

HENRICK, J. O. Apple black spot (Venturia inaequalis) investigations. *The Tasmanian Journal of Agriculture*, Hobart, 1939, Vol. X (New Series), No. 3, pp. 150-151.

HOFFMANN. Der Kartoffelkäfer in Frankreich. *Deutsche Landwirtschaftliche Presse*, Berlin 1940, 67. Jahrg., Nr. 41, S. 373, Abb. 506-508.
[*Leptinotarsa decemlineata*].

HOLZ, W. Die wichtigsten Krankheiten an lagernden Äpfeln und ihre Verhütung. *Biologische Reichsanstalt für Land- und Forstwirtschaft. Flugblatt Nr. 174/75*, Berlin 1939, 6 S., 1 Taf.

HOLZ, W. Untersuchungen über die Biologie von Fusicladium dendriticum und pirinum in den Jahren 1936-1938 als Grundlage für die Bekämpfung (I). *Forschungsdienst*, Berlin-Dahlem 1939, Bd. 8, Heft 5, S. 417-425. Schrifttum, S. 424-425.

HONEY, Edwin E. Monilinia causing a brown rot and blight of the common azalea. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 6, pp. 537-538.
[*Monilinia azaleae* sp. nov. on *Rhododendron roseum*. A Latin diagnosis is included].

HUGO, F. C. Damage by frost to sultana vineyards along the Orange River. *Farming in South Africa*, Pretoria, 1939, Vol. XIV, No. 163, pp. 395-396.

HULEA, A. Contributions à la connaissance des champignons commensaux des Urédinées. *Académie Roumaine. Bulletin de la Section Scientifique*, Bucureşti, 1939, tome XXII^{ème}, nº 4, p. [196]-214, fig. 1-20.

HYRE, R. A. The effect of sulfur fungicides on the photosynthesis and respiration of apple leaves. *Cornell University. Agricultural Experiment Station. Memoir 222*, Ithaca, New York, 1939, 40 pp., 5 figs. References, pp. 39-40.

IVANOFF, S. S., and YOUNG, P. A. Tomato fruit pox. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 4, pp. 343-345, fig. 1.
[The cause of this abnormal condition is unknown].

JACQUES, Charles. Les maladies du bananier en Nouvelle-Calédonie. *Revue Agricole*, Nouméa, 1939, p. 3605-3613.
[*Cosmopolites sordidus*, *Anguillulina* sp., *Scirtothrips signipennis*, *Thrips florum*, *Physothrips bilongilineatus*].

JAGGER, I. C., and WHITAKER, Thomas W. The inheritance of immunity from mildew (Bremia lactucae) in lettuce. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 5, pp. 427-433. Literature cited, pp. 432-433.

JONES, Leon K. Fusarium leaf spot of Sansevieria. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 6, pp. 527-530, figs. 1-2.
[*Fusarium moniliforme* on *Sansevieria zeylanica* and *S. zeylanica* var. *laurentii*].

JONES, Leon K. Fruit stripe of tomato caused by a tobacco type of virus. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 6, pp. 538-540, figs. 1-2.

JONES, Leon K. Fumigation injury of chrysanthemum. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 6, pp. 540-541, fig. 1.

KEITT, G. W., and LANGFORD, M. H. A preliminary report on variability and inheritance in Venturia inaequalis. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 5, pp. 452-453.

KIRCHNER, Hans-Alfred. Versuche über den Einfluss der Winterkälte auf den Kornkäfer (*Calandra granaria* L.). *Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin 1940, 20. Jahrg., Nr. 10, S. 60-64, Abb. 1-3. Literaturverzeichnis, S. 64.

KNECHTEL, Wilhelm, şi MANOLACHE, Constantin. Păduchele negru de frunze (Doralis fabae). *Viaţa Agricolă*, Bucureşti, 1940, an. XXXI, no. 8, pag. [241]-247, fig. 1-9.

KRETOVICH, V. L., and TOKAREVA, R. R. Diagnostik des durch *Eurygaster integriceps* beschädigten Kornes. *Comptes rendus (Doklady) de l'Académie des Sciences de l'URSS*, Moscou, 1940, nouv. sér., vol. XXVII, nº 6, p. 571-574. Zitierte Literatur, p. 574.

KREUTZBERG, V. E. A new virus disease of *Pistacia vera* L. *Comptes rendus (Doklady) de l'Académie des Sciences de l'URSS*, Moscou, 1940, nouv. sér., vol. XXVII, nº 6, p. 614-617, figs. 1-3.

LAMMERTS, W. E. Ethyl mercury iodide—an effective fungicide and insecticide. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 4, pp. 334-338, figs. 1-2.

LANGERBUCH, R. Tierische Schädlinge der Treibgurken. *Biologische Reichsanstalt für Land-und Forstwirtschaft. Flugblatt Nr. 96*, dritte Auflage, Berlin 1939, 6 S., 3 Abb.
[*Tetranychus althaeae, Heliothrips haemorrhoidalis, Halticus saltator, Trialeurodes vaporariorum, Aphis gossypii, Heterodera radicicola*, etc.].

LANGFORD, M. H., and KEITT, G. W. Heterothallism in Venturia piriua. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 5, p. 452.

LINFORD, M. B. A miniature rost-observation box. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 4, pp. 348-349.

LING, Lee. Seedling stem blight of soybean caused by Glomerella glycines. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 4, pp. 345-347, fig. 1.

LING, Lee, and YANG, Juhwa G. A mosaic disease of rape and other cultivated crucifers in China. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 4, pp. 338-342, figs. 1. 2. Literature cited, p. 342.

LOCKWOOD, Stewart. The grasshopper outbreak in 1939. *Bulletin of the Department of Agriculture, State of California*, Sacramento, California, 1939, Vol. XXVIII, Nr. 6, pp. 393-411, figs. 1-5.
[*Melanoplus mexicanus, M. devastator, Camnula pellucida, Oedaleonotus enigma*].

LOEWEL, E. L. Das Verhalten von dinitroorthokresolhaltigen Winterspritzmitteln bei der diesjährigen Ranpenplage im Altenland. *Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin 1940, 20. Jahrg., Nr. 9, S. 54-55.

LONGRÉE, Karla. Coniothyrium fuckelii Sacc. on rose leaves. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 5, pp. 451-452, fig. 1.

LUDBROOK, W. V. Occurrence of *Sclerotinia minor* on a bowling green. *The Journal of the Australian Institute of Agricultural Science*, Sydney, 1940, Vol. 6, No. 1, pp. 51-53.

MACKIE, D. B., and CARTER, W. B. Supplementary control of codling moth. *Bulletin of the Department of Agriculture, State of California*, Sacramento, California, 1939, Vol. XXVIII, No. 6, pp. 378-386, figs. 1-3.
[*Cydia pomonella*].

MACKIE, D. B., and CARTER, W. B. Observation on Hypera brunneipennis and its destruction in baled hay by fumigation. *Bulletin of the Department of Agriculture, State of California*, Sacramento, California, 1939, Vol. XXVIII, No. 6, pp. 387-391, fig. 1.

MACKIE, D. B., and CARTER, W. B. Destruction of alfalfa weevil, Hypera variabilis, by fumigation and other means. *Bulletin of the Department of Agriculture, State of California*, Sacramento, 1939, Vol. XXVIII, Nos. 7, 8, 9, pp. 466-470.

MAGEE, C. J. P. Transmission of infectious chlorosis or heart-rot of the banana and its relationship to cucumber mosaic. *The Journal of the Australian Institute of Agricultural Science*, Sydney, 1940, Vol. 6, No. 1, pp. 44-47, figs. 1-3. References, p. 47.

MANOLACHE, C. I. Metode de combaterea gărgăriței la mazăre (*Bruchus pisorum* L.). *Viața Agricolă*, București, 1940, an. XXXI, no. 7, pag. 238-239.

MASSELIN, Jean. Résultats des essais de la campagne 1936-1937 pour la destruction du chiendent et du liseron dans les vignes. *Le Progrès Agricole et Viticole*, Montpellier, 1940, 61e année, t. 121, nº 1, p. 6-9.
[*Agropyrum repens, Convolvulus arvensis*].

MCLEAN, Ruth, PINCKARD, J. A., DARKIS, F. R., WOLF, F. A., and GROSS, P. M. The use of paradichlorobenzene in seedbeds to control tobacco downy mildew. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 6, pp. 495-506, fig. 1. Literature cited, p. 506.
[*Peronospora tabacina*].

MILLER, D. Termites or " white ants ". *The New Zealand Journal of Science and Technology*, B. General Section, Wellington, 1939, Vol. XXI, No. 2B, pp. [57-B]-5B, figs. 1-6.

NAUDE, P. J. The control of root-knot in tobacco by means of crop rotation. *Farming in South Africa*, Pretoria, 1939, Vol. XIV, No. 164, pp. 442-460.
[*Heterodera marioni*].

NEL, R. I., and STUBBINGS, W. A. K. The pear-bud mite. New methods of control. *Farming in South Africa*, Pretoria, 1939, Vol. XIV, No. 163, pp. 410-412, figs. 1-4.
[*Eriophyes pyri*].

NEWHALL, A. G., and CHITWOOD, B. G. Onion eelworm rot or bloat caused by the stem or bulb nematode, Ditylenchus dipsaci. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 5, pp. 390-400, figs. 1-4, Literature cited, pp. 399-400.

NICOLAS, G[ustave], et AGGÉRY [Berthe]. Nouveaux exemples de coexistence de plusieurs parasites absolus sur la même plante. Variations dans la forme des conidiophores de *Bremia Lactucae* Regel. *Revue de Mycologie*, Paris, 1939, tome IV (n. s.), fasc. 5-6, p. 187-195, fig. 1-16.
[See also this *Bulletin*, 1939, No. 10, p. 249. — *Coleosporium senecionis*, *Bremia lactucae*, and a *Peronospora* for which the authors suggest the name of *P. senecionis*, on *Senecio vulgaris*; *P. antirrhini* and *Erysiphe linkii* on *Antirrhinum orontium*].

ONISHCHENKO, E. G. Die Verbesserung der Bachfähigkeit des Mehles aus durch *Eurygaster integriceps* befallenem Korn mittels der thermischen Behandlung des Mehles oder des Kornes. *Comptes rendus (Doklady) de l'Académie des Sciences de l'URSS*, Moscou, 1940, nouv. sér., vol. XXVII, nº 8, p. 809-817, fig. 1-3.

OSTERWALDER, A. Vom Inkubationskalender der Peronospora. *Schweizerische Zeitschrift für Obst-und Weinbau*, Wädenswil 1939, 48. Jahrg., Nr. 26, S. 519-522.
[*Plasmopara viticola*].

PARRIS, G. K. Mechanical transmission of yellow-spot virus : evidence for identity with spotted-wilt virus. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 4, pp. 299-312, figs. 1-8. Literature cited, p. 312.

PETTY, F. W. Biological control of jointed cactus. *Farming in South Africa*, Pretoria, 1939, Vol. XIV, No. 163, pp. 413-415, figs. 1-5.
[*Opuntia aurantiaca*].

PICHLER, Friedrich. Prüfung von Beizmitteln gegen Schneeschimmel (*Fusarium*) im Feldversuch. *Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin 1940, 20. Jahrg., Nr. 9, S. 53-54, Abb. 1-2. Schrifttum, S. 54.

PINCKARD, J. A. MCLEAN, Ruth, DARKIS, F. R., GROSS, P. M., and WOLF, F. A. Toxicity of paradichlorobenzene in relation to control of tobacco downy mildew. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 6, pp. 485-495, figs. 1-2. Literature cited, p. 495.
[*Peronospora tabacina*].

RĂDULEȘCU, Eugen, și OSTROGOVICH, Sabina. Influența atacului de ploșnițe asupra calității graiului. *Viața Agricolă*, București 1940, an. XXXI, no. 8, pag. 260-263.
[*Eurygaster* and *Aelia* spp.].

RICHARDS, Mathias C. A soft rot of apples caused by Trichoseptoria fructigena. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 4, pp. 328-334, figs. 1-3.

RIKER, A. J. Plant materials valuable for studying certain basic disease problems. *Chronica Botanica*, Waltham, Mass., U. S. A., 1940, Vol. 6, No. 1, pp. 5-6.

RODENHISER, H. A., and TAYLOR, J. W. Effects of soil type, soil sterilization, and soil reaction on bunt infection at different incubation temperatures. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 5, pp. 400-408, figs. 1-2. Literature cited, p. 408.
[*Tilletia tritici* and *T. levis*].

ROGOJANU, V. Observațiuni biologice asupra speciei Pyrameis (Vanessa) cardui L. *Viața Agricolă*, București 1940, an. XXXI, no. 9, pag. 276-279, fig. 1-4.

ROLDAN, Emiliano F. Damping-off of seedlings in forest nursery. *The Philippine Journal of Forestry*, Manila, 1939, Vol. 2, No. 3, pp. 225-233, figs. 1-5, pl. 1. References, p. 231.
[*Pythium ultimum*].

ROUART, Stany. Dégâts causés par la grêle sur les vignes en débourrement. *Agriculture*, Paris, 1939, 3e année, nº 28, p. 457-460.

SAKIMURA, K. Evidence for the identity of the yellow-spot virus with the spotted-wilt virus: experiments with the vector, Thrips tabaci. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 4, pp. 281-299, figs. 1-4. Literature cited, pp. 297-299.

SALZMANN, Rudolf. Untersuchungen über die Ackerunkräuter in Gebieten schweizerischer Kleegraswirtschaften. *Landwirtschaftliches Jahrbuch der Schweiz*, Bern 1939, 53. Jahrg., Heft 7, S. [669]-750, Fig. 1-5. Literaturverzeichnis, S. 748-750.

SĂVULESCU, Tr[ajan], SANDU-VILLE, C., ARONESCU-SĂVULESCU, Alice, HULEA, A. Starea fitosanitară în România în anul 1937-1938. L'état phytosanitaire en Roumanie au cours de l'année 1937-1938. *Institutul de Cercetări Agronomice al României. Metode, Îndrumări, Rapoarte, Anchete.* Bucureşti 1940, Nr. 62, 98 p.

SCHMITT, C. G. Cultural and genetic studies on Ustilago zeae. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 5, pp. 381-390. Literature cited, pp. 389-390.

SELLKE, Kurt. Die natürlichen Feinde des Kartoffelkäfers und ihre praktische Bedeutung. *Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin 1940, 20. Jahrg., Nr. 10, S. [57]-60, Abb. 1-3. Literaturverzeichnis, S. 60. [*Leptinotarsa decemlineata*].

SEVERIN, Henry H. P. Factors affecting curly-top infectivity of beet leafhopper, Eutettix tenellus. *Hilgardia*, Berkeley, California, 1939, Vol. 12, No. 8, pp. 497-526, fig. 1, pls. 1-4. Literature cited, pp. 525-256.

SIEGLER, E. A., and BOWMAN, J. J. Crown gall of peach in the nursery. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 5, pp. 417-426, figs. 1-2. [*Phytomonas tumefaciens*].

SILVA BARRIOS, Felix A. Enfermedades de las flores. Parásitos vegetales y animales. *El Campo*, Buenos Aires, 1939, año XXIII, nº 270, págs. 42 a 44, 3 figs.

SILVEIRA, Verlande Duarte. As doenças de virus e o seu estudo. *Revista da Sociedade Brasileira de Agronomia*, Rio de Janeiro, 1939, vol. II, nº 4, pags. [61]-79, figs. 1-22. Bibliografia, pags. 78-79.

SMIT, Bernard. Mushroom insects and their control. *Farming in South Africa*, Pretoria, 1939, Vol. XIV, No. 164, pp. 447-448.

SMITH, Ralph H. European red mite in Southern California. *Bulletin of the Department of Agriculture, State of California*, Sacramento, California, 1939, Vol. XXVIII, No. 6, pp. 412-415. Literature cited, pp. 414-415. [*Paratetranychus pilosus*].

SMITH, Ralph H. Citrus red mite on ornamental plants. *Bulletin of the Department of Agriculture, State of California*, Sacramento, 1939, Vol. XXVIII, Nos. 7, 8, 9, p. 506. [*Paratetranychus citri*].

SMITH, T. E. Host range studies with Bacterium solanacearum. *Journal of Agricultural Research*, Washington, D. C., 1939, Vol. 59, No. 6, pp. 429-440. figs. 1-5. Literature cited, pp. 439-440.

SPRAGUE, Roderick. Controlling seed-borne stinking smut of wheat by disinfectants. *Oregon State System of Higher Education. Agricultural Experiment Station. Oregon State College. Station Bulletin 363*, Corvallis, 1939, 33 pp. [*Tilletia tritici* and *T. levis*].

SPRAGUE, Roderick. Notes on Septoria scalds of vetch and peas in Oregon. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 6, pp. 541-542, fig. 1. [*Septoria viciae, S. pisi*].

STAHEL, Gerold, und GEIJSKES, D. C. Ueber den Bau der Nester von Atta cephalotes L. und Atta sexdens L. (Hym. Formicidae). *Revista de Entomologia*, Rio de Janeiro, 1939, vol. 10, fasc. 1, pags. 27-78, Fig. 1-21, Taf. 1-26. Literatur, pag. 78.

STEVENS, Neil E. Losses from bunt of wheat in the United States. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 5, pp. 449-451, fig. 1.
[*Tilletia tritici*, *T. levis*].

STEVENSON, F. J. Late blight resistance in potato varieties as reflected in yields. *American Potato Journal*, Sommerville and New Brunswick, N. J., 1939, Vol. 16, No. 9, pp. [229]-232.
[*Phytophthora infestans*].

STUBBINGS, W. A. K., and NEL, R. I. Codling moth control in the Western Province with special reference to the coastal areas. *Farming in South Africa*, Pretoria, 1939, Vol. XIV, No. 163, pp. 406-409, 420, 1 diagr.
[*Cydia pomonella*].

SWANSON, Herman E. Blister rust control in the Inland Empire. *Journal of Forestry*, Washington, D. C., 1939, Vol. 37, No. 11, pp. 849-852.
[*Cronartium ribicola*].

SZIRMAI, János. Adatok a buza fehérkalászúságának kérdéséhez. (Fagykár-Torzsgomba-Szártöröbetegség.). *Mezögazdasági Kutatások*, Budapest 1940, XIII. évf., 7. szám, p. [193]-197, 1.-5. kép. Szakirodalom, p. 197.
[In Hungarian, with title and summary also in German:— 'Beiträge zur Weissährigkeit von Weizen'. — Cold, *Ophiobolus graminis* and *Cercosporella herpotrichoides* cause this disorder].

TEHON, L. R. Two new fungi on legumes. *Mycologia*, Lancaster, Pa., 1939, Vol. XXXI, No. 5, pp. 537-543, figs. 1-6.
[*Placosphaeria medicaginis* n. sp. on *Medicago sativa*; *Catosphaeropsis caulivora* n. gen. and n. sp. on *Lespedeza stipulacea*. Latin diagnoses are appended].

THIELMANN, K. Beiträge zur Maikäferbekämpfung im Walde unter besonderer Berücksichtigung des Bienwaldes (Pfalz). *Forstwissenschaftliches Centralblatt*, Berlin 1939, 61. Jahrg., Heft 18, S. [562]-580, Abb. 1; Heft 19-21, S. 599-600. Schrifttum, S. 600.
[*Melolontha*].

THOMAS, Edward L., and SHEPARD, Harold H. The influence of temperature, moisture, and food upon the development and survival of the saw-toothed grain beetle. *Journal of Agricultural Research*, Washington, D. C., 1940, Vol. 60, No. 9, pp. 605-615, figs. 1-2. Literature cited, pp. 614-615.
[*Oryzaephilus surinamensis*].

THOMAS, H. Earl, RAWLINS, T. E., and PARKER, K. G. A transmissible leaf-casting yellows of peach. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 4, pp. 322-328, figs. 1-2.

THOMAS, K. M., and MENON, K. Krishna. The present position of *pollu* disease of pepper in Malabar. *The Madras Agricultural Journal*, Coimbatore, S. India, 1939, Vol. XXVII, No. 10, pp. [348]-356, 1 pl. References, p. 356.
[There are three causes of the disease of *Piper nigrum*:— (*a*) physiological; (*b*) insect attack (*Longitarsus nigripennis* and a gall-fly); (*c*) fungus attack (*Colletotrichum* sp.)].

THOMAS, P. H. Control of Canary fly. *The Tasmanian Journal of Agriculture*, Hobart, 1939, Vol. X, No. 3, pp. 152-153.
[*Typhlocyba froggatti*].

THOMPSON R., E. Estudio sobre los predatores del gusano rosado (*Pectinophora gossypiella*). *El Agricultor Mexicano*, Ciudad Juárez, Chih., 1940, tomo 56, núm. 5, págs. 25 a 29; núm. 6, págs. [1] a 12.

TIMOSHENKO, M. G. The study of rotenone bearing Thephrosia, a possible source for insecticides. *Proceedings of the Lenin Academy of Agricultural Sciences of U. S. S. R.*, Moscow, 1940, issue 14, pp. 6-[10]. [Bibliography], p. [19].
[In Russian, with title also in English].

TRÄGÅRDH, Ivar. Sveriges skogsinsecter. Stockholm, Hugo Gebers Förlag, 1939, sid. XII + 509, 326 fig. Litteratur, sid. [504]-508.

TROPOWA, A. T. Influence of a return of spring cold weather on injuries of spring wheat by Helminthosporium sativum P. K. et B. *Proceedings of the Lenin Academy of Agricultural Sciences of U. S. S. R.*, Moscow, 1940, issue 10, pp. 24-[28]. [Bibliography], p. [28].
[In Russian, with title also in English].

TUCKER, R. W. E. Cotton growing and cotton pest control. *Agricultural Journal*, Barbados, 1939, Vol. 8, No. 1, pp. 3-7. Reference, p. 7.

TUCKER, R. W. E. The control of Diaprepes abbreviatus L. and Lachnosterna (Phytalus) smithi Arrow in Barbados surveyed over a period of eleven years. *Agricultural Journal*, Barbados, 1939, Vol. 8, No. 1, pp. 8-18. References, p. 18.

URQUIJO LANDALUZE, Pedro. Investigaciones sobre las orugas minadoras del maíz en Galicia (*Pyrausta nubilalis* Hbn. y *Sesamia vuteria* Stoll.). *Boletín de Patología Vegetal y Entomología Agrícola*, Madrid, 1939, vol. VIII-1936, nos 31, 32, 33 y 34, págs. 87 a 98, figs. 1-17.

URQUIJO LANDALUZE, Pedro. Posibilidades de lucha biológica contra las orugas de la col. *Boletín de Patología Vegetal y Entomología Agrícola*, Madrid, 1939, vol. VIII-1936, nos 31, 32, 33 y 34, págs. 171 a 178, figs. 1-4.
[*Pieris brassicae, P. rapae, Mamestra brassicae*].

VALLEAU, W. D. Sweetclover, a probable host of tobacco streak virus. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 5, pp. 438-440.
[*Melilotus alba*].

VAN DER VECHT, J. De bestrijding van de klapperrups, Artona (Brachartona) catoxantha, door bespuiting met derris-suspensies. *Landbouw*, Buitenzorg 1939, XV jaarg., no 7, blz. [389]-428, fig. 1-4. Literatuur, blz. 424-425.
In Dutch, with title and summary in English:— 'The control of the coconut zyganeid Artona catoxantha by spraying with aqueous derris suspensions'].

VELASCO LLANOS, Vicente. El Alabama en la zona algodonera de Armero. *Revista Facultad Nacional do Agronomía*, Medellín, Colombia, S. A., 1939, año I, vol I, núm. 2, págs. [149] a 182, 8 figs., 3 láms. Bibliografía, pág. 182.
[*Alabama argillacea*].

VELTISCHEV, P. A. A field method for determination of the beginning of oviposition of Locusta migratoria L. *Proceedings of the Lenin Academy of Agricultural Sciences of U. S. S. R.*, Moscow, 1940, issue 11, pp. 46-[48], figs. 1-3. [Bibliography, p. [48].
[In Russian, with title also in English].

VIÉGAS, A. P. Notas sobre o carvão (*Urocystis Hypoxidis* Thaxter) de *Hypoxis decumbens*. *Revista de Agricultura*, Piracicaba, 1939, vol. 14, n. 7-8, pags [299]-307, figs. 1-9. Literatura citada, pag. 307.

VIÉGAS, A. P. Notas sobre a citologia de *Urocystis Hypoxidis* Thaxter. *Revista de Agricultura*, Piracicaba, 1939, vol. 14, n. 7-8, pags. [308]-310, figs. 1-5.

VILELA, João Arnaldo Lobo. Subsídios para o estudo do Aphis rumicis L. em Portugal. *Revista Agronómica*, Lisboa, 1939, vol. XXVII, nº 2, pags. [183]-[196], fig. 1, graph. I, est. I-II. Bibliographia, pag. 195.
[With summary also in English].

VIMUKTANANDANA, Yan Yong, and CELINO, M. S. Anthracnose of black pepper (Piper nigrum Linn.). *The Philippine Agriculturist*, Laguna, P. I., 1940, Vol. XXIX, No. 2, pp. 124-141, figs. 1-5. Literature cited, pp. 139-140.
[*Glomerella cingulata*].

VOLOSKY Y., Dora. "Agallas del cuello" de los árboles frutales. *El Agricultor del Norte*, La Serena (Chile), 1940, año 25, nº 7, págs. 189 y 190.
[*Bacterium tumefaciens*].

WALLACE, G. B. French bean diseases and bean fly in East Africa. *The East African Agricultural Journal of Kenya, Tanganyika, Uganda and Zanzibar*, Amani, 1939, Vol. V, No. 3, pp. 170-175. References, p. 175.
[*Phytomonas medicaginis* var. *phaseolicola*, *Uromyces appendiculatus*, mosaic, *Colletotrichum lindemuthianum*, *Nematospora coryli*, *Agromyza* (*Melanagromyza*) *phaseoli*].

WEISS, Freeman. Anthracnose and Cladosporium stem spot of peony. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 5, pp. 409-417, fig. 1. Literature cited, p. 417.
The cause of anthracnose has never been definitely established. *Cladosporium paeoniae* is considered the principal etiological factor of stem spot].

WEISS, Freeman, and SMITH, Floyd F. An incubating can for laboratory or field use. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 5, pp. 447-449, fig. 1.

WELCH, D. S. and COLLINS, D. L. Dutch elm disease and its control. *Cornell Extension Bulletin. Bulletin 437*, Ithaca, New York, 1940, 19 pp., 8 figs. [*Ceratostomella ulmi*].

WERNECK, H. L. Die wirtschaftliche Bedeutung von *Orobanche minor* Sutton in Oberdonau. *Angewandte Botanik*, Berlin 1940, Bd. XXII, Heft 3, S. [177]-190, Fig. 1-5, Karten 1-2. Schrifttum, S. 190.

WHITFIELD, F. G. Sarel. Air transport, insects and disease. *Bulletin of Entomological Research*, London, 1939, Vol. 30, Pt. 3, pp. 365-442, maps 1-3. Bibliography, pp. 431-442.

WILCOX, Marguerite S. Diaporthe vaccinii, the ascigerous stage of Phomopsis, causing a twig blight of blueberry. *Phytopathology*, Lancaster, Pa., 1940, Vol. 30, No. 5, pp. 441-443, figs. 1-2.

WILSON, Edward E. Factors affecting development of the bacterial canker of stone fruits. *Hilgardia*, Berkeley, California, 1939, Vol. 12, No. 4, pp. 259-298, figs. 1-9. Literature cited, pp. 297-298. [*Phytomonas cerasi*].

WILSON, Edward E., and HEWITT, Wm. B. Host organs attacked by bacterial canker of stone fruits. *Hilgardia*, Berkeley, California, 1939, Vol. 12, No. 4, pp. 249-255, figs. 1-3. Literature cited, p. 255. [*Phytomonas cerasi*].

WINTER, A. Gerhard. Weitere Untersuchungen über den Einfluss der Bodenstruktur auf die Infektion des Weizens durch Ophiobolus graminis. *Zentralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten*, II. Abt., Jena 1940, 101. Bd., Nr. 18/20, S. 364-388, Abb. 1-8. Schrifttum, S. 388.

WOGLUM, R. S. Summer scale problems. *The California Citrograph*, Los Angeles, 1940, Vol. 25, No. 10, pp. 338-339 [Coccidae].

WOLF, Frederick A. What lessons may be learned from experiences with tobacco downy mildew ? *Le Tabac*, Rome, 1939, 2me année, nº 3, p. 14-15. [*Peronospora tabacina*].

WOLF, Frederick A. Quels enseignements peut-on tirer des expériences faites avec la moisissure duveteuse ? *Le Tabac*, Rome, 1939, 2me année, nº 3, p. 16-17. [French translation of article in English by same author].

WOLF, F[rederick] A. Unsere bisherigen Erfahrungen mit dem Meltau des Tabaks. *Le Tabac*, Rome, 1939, 2me année, nº 3, p. 18-19. [German translation of article in English by same author].

WOLF, Frederick A. A leaf spot fungus on Nyssa. *Mycologia*, Lancaster, Pa., 1940, Vol. XXXII, No. 3, pp. 331-335. Literature cited, p. 335. [*Mycosphaerella nyssaecola* (Cooke) comb. nov. (syn. *Sphaerella nyssaecola* Cooke, *Phyllosticta nyssae* Cooke)].

WORMALD, H. Storage scab of apples. *The Gardeners' Chronicle*, London, 1940, Third Series, Vol. CVII, No. 2787, p. 257, figs. 112-113. [*Venturia inaequalis*].

YOSHII, Hazime. On the mode of infection of *Helminthosporium Oryzae* (*Ophiobolus Miyabeanus* Ito et Kurib.) to rice plant. *Annals of the Phytopathological Society of Japan*, Tōkyō, 1939, Vol. IX, No. 3, pp. [170]-172, 6 figs. [In Japanese, with title also in English].

ZACHER, Friedrich. Insekten und Milben an Sauerfutter. *Mitteilungen der Gesellschaft für Vorratsschutz E. V., Berlin-Steglitz*, Berlin 1940, 16. Jahrg., Nr. 3, S. 2-33.

ZACHER, F[riedrich]. Die Einwirkung oberflächenaktiver Stoffe auf Insekten. *VII. Internationaler Kongress für Entomologie. Berlin, 15.-20. August 1938.* Weimar, Druck von G. Uschmann, 1939, S. [2884]-2891.

ZACHER, F[riederich]. Die Dörrobstmotte und die Kakaomotte. *VII. Internationaler Kongress für Entomologie. Berlin, 15.-20. August 1938.* Weimar, Druck von G. Uschmann, 1939, S. [2892]-2902. [*Plodia interpunctella* and *Ephestia elutella*].

ZACHER, F[riedrich]. Die wirtschaftliche Bedeutung und wissenschaftliche Entwicklung des Vorratsschutzes. *VII. Internationaler Kongress für Entomologie. Berlin, 15.-20. August 1938*. Weimar, Druck von G. Uschmann, 1939, S.[2905]-2912.

ZACHER, F[riedrich]. Die Gliedertierfauna der Mühlen und Getreidespeicher. *VII. Internationaler Kongress für Entomologie. Berlin, 15.-20. August 1938*. Weimar, Druck von G. Uschmann, 1939, S. [2913]-2918.

ZACHER, F[riedrich]. Verschleppung und Einbürgerung von Vorratsschädlingen. *VII. Internationaler Kongress für Entomologie. Berlin, 15-20. August 1938*. Weimar, Druck von G. Uschmann, 1939, S. [2919]-2926.

ZAMBIN, I. M. The resistance to cold of the eggs of the migratory locust (Locusta migratoria L.). *Plant Protection*, Leningrad, 1939, No. 19, pp. 48-[55], figs. 1-2. [Literature], p. [55].
[In Russian, with title and summary also in English].

ZAMORA, J. Camero. El mildiu, oidium o moho blanco de la rosa. *El Agricultor Venezolano*, Caracas-Venezuela, 1939, año IV, no. 40, pág. 33.
[*Sphaerotheca pannosa*].

ZAMORA, J. Camero. El mosaico de la caña de azúcar. *El Agricultor Venezolano*, Caracas-Venezuela, 1940, año IV, nos. 45-46, págs. 15 a 18, 2 figs. Referencias, pág. 18.

ZAUMEYER, W. J. Three previously undescribed mosaic diseases of pea. *Journal of Agricultural Research*, Washington, D. C., 1940, Vol. 60, No. 7, pp. 433-452, figs. 1-4. Literature cited, pp. 451-452.

ZIOPKALO, V. L. On control measures against the Spanish fly ((Lytta vesicatoria L.). *Plant Protection*, Leningrad, 1939, No. 19, pp. 157-163, fig. 1.
[In Russian, with title also in English].

ZUNDEL, G. L., STEVENSON, J. A., TUCKER, C. M., WELCH, D. S., and WEST, Erdman. A note on the status of the generic name Urocystis. *Phytopathology*, Lancaster, Pa., Vol. 30, No. 5, pp. 453-454.

ZYBINA, S. P. A study of the virulence of the geographical populations of the stinking smut of wheat. *Plant Protection*, Leningrad, 1939, No. 19, pp. 120-[131], graphs 1-2. [Literature], p. [131].
[In Russian, with title and summary also in English. — *Tilletia tritici* and *T. levis*].

Prof. UGO PAPI, *Segretario generale dell'Istituto, Direttore responsabile.*

PRINTING OFFICE CARLO COLOMBO — ROME, JANUARY 15, 1941.

BOOKS PRESENTED TO THE LIBRARY OF THE INTERNATIONAL INSTITUTE OF AGRICULTURE

Adermann, W. Die Besteuerung der Landwirtschaft. 2. erweiterte Aufl. Berlin, Reichsnährstand Verlags-Ges. m. b. H., 1940. v. 1. Einkommensteuer, Umsatzsteuer und Bürgersteuer. 1940. 211 p.

Anleitung I, II, III, zur Durchführung der Einheitsbewertung 1940 des Grundbesitzes in der Ostmark und in den sudetendeutschen Gebieten, herausgegeben von Oberfinanzpräsidenten Wien. Wien, Staatsdruckerei, 1939. 3 v.

Assemblée permanente des présidents des chambres d'agriculture. 13e Session. Session ordinaire du 29 mai 1940. Compte rendu (tome II). Aurillac, Imp. du Cantal, 1940. 200 p.

Bräuer, O. Der Bauernhof; eine bäuerliche Nutzungslehre. Frankfurt am Main, M. Diesterweg, 1940. IV, 76 p.

Bremser, H. Die Entwicklung des Siedlungsbildes von Planitz; ein Beitrag zur Siedlungsgeographie und zur Raumforschung. Dresden, Zahn & Jaensch, 1939. 87 p. (Dresdner geographische Studien. Hft. 14.)

Corporación argentina de productores de carnes. Memoria y balance del 3o, 4o ejercicio 1937/38, 1938/39. Buenos Aires, 1938-1939. 2 v.

Dencker, C. H. Landwirtschaftliche Stoff- und Maschinenkunde; allgemeinverständlicher Leitfaden der physikalischen Grundlagen und Landmaschinenkunde für Landwirtschaftsschulen, Wirtschaftsberatung und die bäuerliche Praxis. 3. Aufl. Berlin, P. Parey, 1940. VIII, 243 p.

Deutscher Forstverein, Berlin. Jahresbericht 1939. Berlin, Reichsnährstand Verlags-Ges. m. b. H., [1940]. 548 p.

Floristisch-soziologische Arbeitsgemeinschaft in Niedersachsen. Mitteilungen Heft 3-5. Hrsg. von Reinhold Tüxen. Hannover, 1939. Hannover, C. V. Engelhard & Co., 1939. 3 v.

Franck, H. Die Behandlung verdorbener Pferde; praktischer Ratgeber für alle, die mit Pferden zu tun haben. 9. verbesserte und erweiterte Aufl. Stuttgart, Franckh, [1940]. 96 p. Kartoniert RM 3,80.

Frauenknecht, F. Billige und gesunde Nahrungsmittel aus dem Wald; ein Beitrag zur Nahrungsfreiheit des deutschen Volkes. Dresden, Müller, [1939]. 64 p. (LL-Schriftenreihe, Hft. 8.)

Frunzănescu, A. et G. Dumitrașcu. Munca cu vitele in agricultura noastră. București, Tiparul « Românesc », 1940. 36 p. [Draft animals in our agriculture].

Frunzănescu, A. et G. Dumitrașcu. Munca omenească folosită in agricultura noastră. București Tiparul « Romanesc », 1940. 36 p. [Human work utilised in our agriculture].

Gasparini, P. Risultati e possibilità della bonifica nel comprensorio delle Valli del Sangro e dell'Aventino. [Lanciano, R. Carabba, 1940]. XI, 213 p. (Consorzio di bonifica e di irrigazione delle Valli del Sangro e dell'Aventino, Chieti).

Gesellschaft für die Geschichte und Bibliographie des Brauwesens E. V. Jahrbuch 1939/40. Berlin, 1940. 358 p.

Hering, K. Schafzucht und Schafhaltung in Pommern. 2. Aufl. Stettin, Landesverband Pommerscher Schafzüchter, 1940. 105 p.

Kruft, F. Neuzeitlicher Brombeerbau im Erwerbsbetrieb und im Garten. Stuttgart, E. Ulmer, [1940]. 104 p. (Grundlagen und Fortschritte im Gartenund Weinbau, Hrsg. C. F. Rudloff. Hft. 59.)

Lantbruksveckan, Stockholm. Handlingar 1940. Stockholm, Nordiska bokhandel, [1940]. 323 p. [Acts of the Agricultural week.]

Magyar történelmi ¦társaság, Budapest. Transilvania, a cura della Società storica ungherese. [Budapest « Athenaeum »], 1940. 304 p. [Italian Edition, by Rodolfo Mosca.]

National education association of the United States. Washington. Department of rural education. Community resources in rural schools. Yearbook 1939. Washington, 1940. 109 p.

Osterwalder, A. und R. Wiesmann. Pilzkrankheiten und tierische Feinde an Gemüsepflanzen und deren Bekämpfung. Wädenswil, A. Stutz & Cº., 1939. 180 p.

Papageorgiou, E. Die Gemüse- und Kartoffelwirtschaft im Rahmen der griechischen Landwirtschaft. Würzburg- Aumühle, K. Triltsch, 1940. V, 83 p.

Patrone, G. Assestamento e conversione dei cedui composti. Firenze, Tip. M. Ricci, 1940. 96 p. (Pubblicazioni della R. Università degli studi di Firenze, Facoltà agraria e forestale.)

Rechenbach, H. Moordorf; ein Beitrag zur Siedlungsgeschichte und zur sozialen Frage. Berlin, Reichsnährstand Verlags-Ges. m. b. H., 1940. 94 p.

Ruini, C. Economia di guerra; linee teoriche. Bari, G. Laterza, 1940. 155 p. (Biblioteca di cultura moderna, n. 352).

Sartorius, O. 150 Jahre Förderung des Flachsanbaus in Minden-Ravensberg. Bielefeld, G. Thomas, 1940. 119 p.

Schmidt, H. Lippische Siedlungs- und Waldgeschichte. Detmold, E. Hammann, 1940. 207 p. (Sonderveröffentlichungen des Naturwissenschaftlichen Vereins für das Land Lippe, 6.)

Schumacher, R. H. Deutschlands Brotgetreideversorgung gesichert; Thünen-Tellow und sein Werk. Neudamm, J. Neumann, 1940, 49 p.

Seiler, K. und W. Hildebrandt. Die Landflucht in Franken. Leipzig, K. F. Koehler, 1940. 144 p. (Berichte zur Raumforschung und Raumordnung, Bd. 3.)

Siebold, F. Das Bauerndorf in der Erzeugungschlacht. München, Reichsnährstand Verlag, 1940, 95 p.

Smirnov, A. I. Biochemie des Tabaks. Den Haag, W. Junk, 1940. 176 p. (« Sonderdruck aus: « Tabulae biologicae », v. 18 »).

Staehler, H. Die Mähweide-Uhr. Ein Ratgeber für Weide- und Mähweidewirte in Süddeutschland. 2.te erweiterte Auflage. München, Reichsnährstand, 1940, 63 p.

Vigiani, D. [and] G. Scrivere. Trattato di economia rurale. 2ª ed. Genova, Soc. An. Editrice Dante Alighieri, 1940. XI, 399 p.

Die **Volkswirtschaft** Ungarns im Jahre 1938, 1939, von Georg Káldor [etc.]. Budapest, Verlag des Pester Lloyd, 1939, 1940. 2 v. (Wirtschaftsjahrbuch des Pester Lloyd).

Weeth, E. Bäuerliche Lebensgesetze, dargestellt am Beispiel des aischtalbäuerlichen Lebenskreises. Neustadt a. d. Aisch, C. W. Schmidt, 1940. 161 p.

OTHER PUBLICATIONS ISSUED BY THE INTERNATIONAL INSTITUTE OF AGRICULTURE

A complete list of the publications will be sent on request.

Actes de la Conférence internationale pour l'organisation de la lutte contre les sauterelles. Rome, 28-31 octobre 1920. (1921, 171 pp., 8vo) . . . . . **15 lire**

The Loss to Agriculture caused by Factory Fumes. Lectures given at the International Institute of Agriculture by Professor H. CRISTIANI, Geneva, and Professor Dr. J. STOKLASA, Prague. (1927, 26 pp., 3 figs., 25 pls., 8vo) . . . **15 »**

Actes de la Conférence internationale pour la protection des plantes. Rome, 10-16 avril 1929. (1929, 201 pp., 8vo) **25 »**

La législation du commerce des plantes. (1938, XVI + 364 pp., 8vo) . . . . . **35 »**

INTERNATIONAL YEARBOOK

OF

AGRICULTURAL STATISTICS, 1939-40

PRICE: **100 lire.** — CLOTH-BOUND: **110 lire.**

The prices of all publications issued by the International Institute of Agriculture include postage.

INTERNATIONAL REVIEW OF AGRICULTURE

[ANNUAL SUBSCRIPTION TO THE REVIEW (4 PARTS): **125 lire** (1)
SEPARATE NUMBERS OF THE REVIEW (4 PARTS): **14 lire** (2)]

Published monthly and incorporating the following four parts, which are also published separately and in advance as *reprints* from the *Review:*—

(1) **Monthly Bulletin of Agricultural Economics and Sociology.**	ANNUAL SUBSCRIPTION	45 (3) **lire**
	SEPARATE NUMBERS..	5 (4) ,,
(2) **Monthly Crop Report and Agricultural Statistics.**	ANNUAL SUBSCRIPTION	45 (3) ,,
	SEPARATE NUMBERS..	5 (4) ,,
(3) **Monthly Bulletin of Agricultural Science and Practice.**	ANNUAL SUBSCRIPTION	45 (3) ,,
	SEPARATE NUMBERS..	5 (4) ,,
(4) **International Bulletin of Plant Protection.**	ANNUAL SUBSCRIPTION	40 (3) ,,
	SEPARATE NUMBERS..	4 (5) ,,

A special edition of the *Monthly Crop Report and Agricultural Statistics* in which the statistics are expressed in the units used in the United States of America is also published.

(1) For Italy and Italian Colonies 100 lire. — (2) For Italy and Italian Colonies 10 lire. — (3) For Italy and Italian Colonies 36 lire. — (4) For Italy and Italian Colonies 4 lire. — (5) For Italy and Italian Colonies 3.50 lire.

The French edition is obtainable at the same prices as the English and appears under the following title :—

REVUE INTERNATIONALE D'AGRICULTURE

(1) **Bulletin mensuel de Renseignements économiques et sociaux;** (2) **Bulletin mensuel de Statistique agricole et commerciale;** (3) **Bulletin mensuel de Renseignements techniques;** (4) **Moniteur international de la Protection des Plantes.**

The German edition consists only of parts 1, 2 and 3 which are published under the following title :—

INTERNATIONALE LANDWIRTSCHAFTLICHE RUNDSCHAU

I. AGRARWIRTSCHAFT – II. AGRARSTATISTIK – III. AGRARTECHNIK

INTERNATIONAL BIBLIOGRAPHY OF AGRICULTURAL ECONOMICS

Published quarterly in a trilingual edition (English-French-German).

ANNUAL SUBSCRIPTION: **30 lire.**

INTERNATIONAL BULLETIN OF AGRICULTURAL LAW

Half-yearly publication.

ANNUAL SUBSCRIPTION: **45 lire.**